

WHAT IS CLAIMED IS:

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1. A segmented die assembly, comprising
 - (a) a plurality of manifold segments each having a polymer flow passage and an air flow passage formed therein; the manifold segments being interconnected in side-by-side relationship wherein the air passages and polymer passages are in fluid communication, respectively;
 - (b) a die module comprising a die body mounted on each manifold segment and having a polymer flow passage and an air flow passage in fluid communication with the polymer flow passage and air passage of its associated manifold segment, respectively; and a die tip or nozzle mounted on the die body and having a polymer flow passage in fluid communication with the polymer flow passage of its associated die body for receiving the polymer melt and discharging a filament or filaments therefrom;
 - (c) means for delivering a polymer melt to at least one manifold segment whereby the melt is distributed through the manifold segments and flows through each die module discharging as a filament or filaments from each die tip or nozzle; and
 - (d) means for delivering air to at least one manifold segment whereby air is distributed in the interconnected manifold segments and flows through each die module discharging through the die tip or nozzle.

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2. The die assembly of Claim 1 wherein ^{said} the die tip or nozzle is selected from the group consisting of meltblowing die tip, spiral spray nozzle, spray nozzle, bead nozzle, and coating nozzle.

A 3. The die assembly of Claim 2 wherein ^{said} the die tip on at least one module is a meltblowing die tip.

Sub A 4. The die assembly of Claim 1 wherein the die tip on each module is air assisted having air passages formed therein, said air passages of the die tip being in fluid communication with air passages of the die body on which it is mounted.

5. The die assembly of Claim 1 wherein each module has an air actuated valve mounted therein to open and close the polymer flow passage therein and each manifold segment having instrument air flow passages formed therein for delivering air to and from the air actuated valve, said assembly further comprising control means for selectively delivering air to and from the air passages of the manifold segment.

A 6. The die assembly of Claim 1 wherein ^{said} the manifold segments are identical.

A 7. The die assembly of Claim 1 wherein ^{said} the assembly comprises from 2 to 100 die segments.

Sub A 8. The die assembly of Claim 1 wherein each manifold segment and the module mounted thereon is from 0.25 to 1.5 inches in width.

9. The die assembly of Claim 1 wherein each manifold segment includes electric heaters for heating the polymer and the air and wherein the air passage of a particular manifold segment is in fluid communication with the air passages of the other manifold segments whereby air flows through each segment before flowing to the module mounted on the particular manifold segment.

10. A meltblowing die comprising

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- (a) a manifold with at least two manifold segments, each segment having a polymer flow passage and an air flow passage, the polymer passages and air flow passages being interconnected, respectively;
 - (b) a die module secured to each manifold segment, each module having a polymer flow passage which registers with its associated manifold segment flow passage, an air flow passage which registers with its associated manifold segment air passage, a die tip or nozzle for discharging polymer as a filament or filaments, and an air flow discharge for delivering air to each side of the filament or filaments;
 - (c) means for delivering a polymer melt to at least one of the manifold segments whereby the melt flows through the interconnected polymer passages of each segment and is delivered to the associated die modules; and
 - (d) means for delivering air to at least one of the interconnected manifold segments whereby the air flows through each segment and is delivered to the associated die modules.
11. The meltblowing die of Claim 10 comprising valve means for selectively controlling the flow of polymer melt through each die module independently.
12. A segmented die assembly comprising a plurality of separate air-assisted die units interconnected in side-by-side relationship, each die unit comprising
- (a) a manifold segment having formed therein (i) an air passage, (ii) a polymer flow passage, and (iii) an instrument air flow passage;
 - (b) a die module having a die body detachably mounted on the manifold segment, and an air-assisted die tip or nozzle mounted on the die body, said die body having

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formed therein (i) an air passage, (ii) a polymer flow passage and (iii) instrument air flow passage which, respectively, are in fluid communication with the air passage, polymer flow passage, and instrument air flow passage of the manifold segment, said die body further having air-actuated valve mounted therein for opening and closing the polymer flow passage thereof, which is in fluid communication with the instrument air flow passage thereof;

said die tip having (i) an air passage and (ii) a polymer flow passage which, respectively, are in fluid communication with the air passage and polymer flow passage of said die body; and

(c) means for selectively delivering air to and from the air passages of the manifold segment for actuating the air-actuated valve.

13. The segmented die assembly of Claim 12 wherein ^{said} the die assembly comprises from 5 to 50 die units.

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